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ANNUAL REPORT
OF THE

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27 JAN. 04

Medical and Health Department
FOR
1902

ANNEXURES.

- I. Hospital Statistics, Return of Surgical Operations, &c.
- II. Yearly Plague incidence. 1900, 1901, 1902. — Plague Epidemic incidence.
- III. Monthly Plague incidence 1900.
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- IX. Statement of Sanitary Contraventions, &c., during 1902.
- X. Report on the Civil Hospital by Dr. Rouget.
- XI. Report of Dr. Paddle, Government Analyst.
- XII. Report on the Medical Stores—(*Not printed*).

I.—STATISTICS OF POPULATION.

The number of inhabitants in the Colony on the 31st December 1902, according to a statement* kindly supplied to me by the Registrar General, amounted to 376,260 giving an increase of 32.6 on the number of the previous year.

The number of Immigrants in the Return under reference is stated to have been 8676, showing an increase of 48 on the number of the previous year, but the number of Emigrants is recorded as having risen to 6239, *i.e.*, an increase of 2355 on the number of 1901.

There were 13,495 births recorded in 1902, giving an increase of 585 on the number of the previous year, while only 12,716 deaths, or 2255 less than 1901, were registered. These figures moreover compare favourably with those mentioned in the last report in showing that the births, contrary to what took place in 1901, exceeded the deaths in 1902, but the unsatisfactory fact still exists that, in the general population, there were only 3719 births against 4127 deaths in the year under review. The difference for the whole population is due the improvement which has taken place in this respect in the Indian population. This occurrence had been observed in connection with the statistics of the year 1900, and an appreciable decrease is consequently taking place in the general population.

The birth-rate was 36.1 o/o last year, against 34.3 in 1901, 37.8 in 1900 and 39.4 in 1899.

The death-rate was 34.0 o/o per annum in 1902, *i.e.* 5.8 less than that of the previous year and 1.7 o/o per annum less than that of 1900.

II.—PREVALENCE OF SICKNESS.

The Sanitary state in 1902 has been a comparatively satisfactory one as judged by the above and the Hospital Statistics,† as well as by the records of the Sanitary Department.

The number of admissions into Hospital amounted to 17,874 being 668 less than in 1901.

The case mortality, exclusive of still births, was 5.57 o/o against 6.96 in the previous year.

Malarial fever was, as usual, answerable for a considerable proportion of the admissions into the various Hospitals. The number, 3360, is however smaller than that for 1901 when it reached 4182. A decrease in the case mortality was also observed under this heading. The figure for 1902 being 1.03 while that for 1901 was 1.64 o/o .

It is gratifying to be able to observe that the admissions for that complaint at Moka Hospital show a decrease of 25 o/o on the number of the previous year. This fact may to a great extent be attributed to the works which have been carried out with a view to improve the sanitation of the District. These measures have been fully described in the report of the Malaria Committee and need not be referred to at greater length in this report.

The cases of chronic malaria have, as was done in the last annual statistics, been included under the heading "Hypertrophy of the Spleen" and the admissions on this account have also been less than in the previous year.

Dysentery.—As might have been expected from its well-known relation to malaria, this disease has also been less pre-

* Table I in Annexure I.

† Vide Annexure I, Statement III.

valent in the year under review than in the previous one. There were 673 cases of this disease admitted into the Public Hospitals in 1902 against 799 in 1901, and the case mortality was much reduced also, the figures being 17.6 o/o in 1901 and 12.17 in 1902.

Enteric fever.—As apprehended in the remarks on that complaint in the report of 1901, enteric fever has been more prevalent last year than in the previous one. There were 36 admissions in the hospitals on this account, against 14 in 1901, and the case mortality was 24.3 o/o. The number of cases notified in accordance with Ordinance No. 47 of 1898 was 157 and the total mortality 44, or 28.02 o/o.

This death-rate is very near that which is recorded among this class of patients in hospitals, and tends to show that only the more severe cases have come under notice.

Cases of typhoid fever in Mauritius, as in other tropical countries, are often far from typical. Besides those cases which are occasionally designated as typho-malaria, there are others which recall the "paratyphoid" fever while many cases of a mild continued fever permit of no positive diagnosis.

Plague.—32 cases of that complaint, all contracted before admission, were detected in the Hospitals of Port Louis, Grand Port and Barkly Asylum. They were at once removed to the plague lazarets or temporarily isolated in special pavilions on the spot, when their condition did not admit of their immediate transfer.

The disease was less prevalent in 1902 than in any year since its appearance in Mauritius as may be seen from the following table:—

Year	No. of Cases.	No. of Death.	Death Rate o/o
1899	1416	1117	78.9
1900	796	593	74.5
1901	1093	805	73.6
1902	506	386	76.3

Annexures II, III, IV & V supply fuller details as regards the distribution of the disease in the Colony and the time of the year when it is more prevalent.

The Sanitary Department have continued to make stringent efforts to combat the scourge and the decrease in its prevalence may fairly be attributed to the measures adopted.

It will be observed, on reference to the second part of Annexure II, that apart from Port Louis and Plaines Wilhems, *i.e.* the town itself and some localities in or near the townships of Rose Hill and Quatre Bornes, the Island has been practically free from the pest, and that the important villages of Mahebourg, Souillac and Poudre d'Or, besides many estates which had been attacked in previous years, have remained free from indigenous plague during the outbreak of 1902.

In addition to the measures of disinfection and aeration carried on in the buildings where plague cases had occurred, the same measures were applied preventively, and, with complete success in most cases, on premises on which rats had been found dead.

War against these rodents, a very difficult task in this Island where they thrive so well, has been unceasingly carried on :

- (a) by means of a special gang of men employed for that purpose in Port Louis and in the townships of Rose Hill, Beau Bassin and Quatre Bornes ;
- (b) by the offer of a premium of 10 cents per rat in town and in the country ; and
- (c) by the use of rats bane which has been extensively resorted to.

An attempt was made to introduce owls for that purpose, but the result has not been successful. Evacuation of infected premises has also been practised and inoculation with Yersin's serum as a prophylactic has been strongly recommended. This serum has also been largely used in the treatment of plague cases in the lazarets.

All these points will be discussed at greater length in special reports.

The following zymotic diseases deserve a short notice :—

Measles.—This disease which had prevailed in a mild form at the close of 1901, gradually spread throughout the Island in 1902, and, during the cold weather, towards the middle of the year, severe cases were observed.

There were 98 patients treated for that complaint in the Public Hospitals with only one death, 540 cases were notified in accordance with the Infectious Diseases Ordinance, and 64 deaths were ascribed to it. While the latter figure is probably correct, the former is quite inaccurate. It is known that many cases were diagnosed as German measles and consequently not reported, and that a large number still, not having been seen by any medical man owing to the mildness of the attack, were never notified.

Diphtheria.—There were seven cases of that disease treated in the hospitals, two of which ended fatally ; but the total number of cases notified was 19 and the deaths 8. The antidiphtheritic serum has proved most efficient in the treatment of the disease when the patients have been inoculated with it early in the attack, and the deaths in the Hospitals were due to the advanced stage of the disease at which medical assistance was applied for.

Scarlet Fever.—Three cases have been notified, they occurred among the Military. The disease is practically unknown in the Island, sporadic cases having only so far been observed at several years' interval.

Influenza.—The number of admissions, 772, into the Hospitals for that complaint which is now endemic in the Island, has been much less than in the previous year when the figure was 1300, and the mortality among these cases was only 2.44 against 3.66 o/o in 1901 ; but much harm is still done by this insidious complaint which frequently lays the foundation for attacks of other diseases and which is partly answerable apparently for many cases of phthisis.

Tuberculosis.—The number of admissions in the Hospitals from this disease, 1,133, shows an increase of 228 over the figure of the previous year.

There are several factors which may account for this, among these may be mentioned :—

- (a.) The greater readiness with which poor people now resort to Hospitals;
- (b.) The poorer circumstances under which a larger part of the population are obliged to live, which render home treatment of a prolonged disease more and more difficult ; and
- (c.) A more accurate diagnosis of all tubercular complaints which are now grouped under their proper heading.

I am not prepared, however, to deny that an actual increase may have taken place in respect of this disease in the Island. The conditions previously referred to and many insanitary conditions which help to disseminate tuberculosis are so prevalent that an increase of that disease may be expected ; but it is not possible to give a definite opinion on this point at present, the more so as, according to statistics available, the mortality from that complaint has been less in 1902 than in the previous year.

Pneumonia.—There were 414 cases, i.e., 65 more patients admitted in the public Hospitals during the past year than in 1901, but the case mortality was less, 31. 6, against 33.3 in the previous year.

Nephritis.—The number of admissions into the Hospitals, 333 in 1902, also shows an increase of 45 over that of the previous year. The causes which may account for the prevalence of this trouble have been referred to in the last report. It is satisfactory to observe, however, that the case mortality has decreased from 21.5 in 1901 to 14.9 in 1902.

Beri Beri.—There is an increase in the admissions in Hospital for this complaint. With the exception of two, the patients were Chinese, all Immigrants recently landed in Mauritius.

Leprosy.—Sixteen cases of that complaint were temporarily treated in the Public Hospitals. According to a return kindly supplied to me by the Poor Law Commissioner, 44 admissions for that disease took place at the Hospice St. Lazare, and the total treated in that Institution during the year was 162.

Full details as to the occurrence of other diseases, number of operations performed, &c., will be found in the return annexed (Statement I).

The number of attendances at the Dispensaries, including 245 out-patients at the Reformatory, besides consultations given to the Members of the Police, to their families and to other Government Servants entitled to free medical advice, was 58,205, showing a decrease of 4475 on the figures for 1901, and an indication of the existence of a better sanitary state during the past year.

III.—RELATIVE MORTALITY IN THE DIFFERENT SEASONS.

The remarks made on this point in previous reports will apply equally well on this occasion.

Malaria prevailed from February to April inclusively and a well marked decrease took place from May to October.

Dysentery however showed a greater prevalence in the third quarter of the year. The occurrence of that complaint usually coincides with that of fever and its incidence late in

winter is unusual. The explanation is that in a large number of cases the complaint occurred in children and was in reality one of the sequelae of measles. The same observation was made last year in respect of the occurrence of diarrhoea.

Influenza and pulmonary diseases were met with principally in July and August, and continued to give rise to a large number of admissions into Hospitals until a late period of the year, a fact which may be due to the wet weather experienced in October and also to the existence of measles at that time.

Plague was worst in the last quarter of the year. The cases from that disease, which had been only 24 in September, rose to 75 in October.

The highest number, 106, was noticed in November and the epidemic rapidly declined after the month of December when 87 cases were recorded.

IV.—METEOROLOGICAL CONDITIONS OF THE SEASONS AND THEIR PROBABLE EFFECTS WITH REGARD TO SICKNESS.

The trying effects of a hot and damp summer are generally manifest on the health of the inhabitants of the Colony from January to April, and besides these depressing influences, there is also at that period of the year the concourse of circumstances favorable to the spread of malaria and the occurrence of dysentery and intestinal complaints. The incidence of these diseases at that period has already been referred to and attention has been called to the occurrence of respiratory diseases from July to October when the cold season is felt.

The statement* kindly furnished by the Director of the Royal Alfred Observatory, supplies full details as regards the variations of temperature, the distribution of rainfalls and the prevalence of winds during the year under review.

It is only necessary to add that there were four cyclones felt at Mauritius in the first two months of 1902, that the mean temperature was not quite 1°. F, above the normal, but that the humidity was 1 o/o less during that year than in 1901.

The foregoing remarks apply to the figures recorded at the Royal Alfred Observatory, but from another statement kindly supplied to me by the Acting Director, I have ascertained that, taking the figures for 10 representative stations, the rainfall was 14.09 inches less than in the previous year, and, except for an excess in February due to the cyclones, it was below normal during the first half of the year, when the influence exercised by this factor on the public health is highest. In October, however, the rainfall was 2.16 inches in excess of that for 1901.

V.—RECURRANCE OF PARTICULAR DISEASES DURING 1902.

The diseases which may be mentioned under this heading are malaria, dysentery, influenza and plague. As observed in the foregoing pages, they have been less prevalent than in the former year.

Plague has, as already stated in previous reports, again not shown any connection with meteorological conditions. The first cases detected in the Island occurred in January 1899, but the disease only became epidemic in June of that year and the out-

break extended to April 1900. Sporadic cases occurred for four months and the second outbreak took place in August 1900. The epidemic abated at the end of March 1901 and the disease was quiescent till September when it started afresh in an epidemic form and lasted again till March 1902. During the past year, the fourth outbreak occurred and began in September 1902, but rapidly abated at the beginning of the present year and only sporadic cases have indicated that it is still in the Colony in a latent state.

The conspicuous part played by the rat in the diffusion of the diseases in Mauritius has repeatedly been brought to notice, and there can be no doubt on this point, but it is worthy of remark that in the outbreak which took place at Flacq in the early part of the year 1902 no plague among rats was observed, no carcasses of these rodents were discovered during the process of disinfection of premises, and the transmission of the disease appears to have been effected by fomites probably contained in infected clothes surreptitiously removed from contaminated dwellings.

In one instance, a possibility of plague pneumonia, being, under unfavorable conditions of living, transmitted from person to person, has come under notice, but fuller investigation of the occurrence has failed to clearly establish the fact, and no single case of contagion of the disease from man to man has been seen so far, either in the lazarets or among the plague staff. No infection from other sources either occurred among the latter during the past year.

VI.—GENERAL SANITARY CONDITION OF THE COLONY.

The year, as already stated, has been a comparatively fair one from the sanitary point of view. The incidence of malaria, dysentery and diarrhoea has been less, but the spread of typhoid has been more marked.

The conditions which affect the water supply have been repeatedly brought to notice, but have unfortunately continued almost unchanged during the past year. It is to be hoped that the provisions made in Ordinance No 35 of 1902 which was enacted at the end of the year, will produce a much desired improvement in this respect.

The following figures kindly supplied by the Registrar General have been arranged in a tabular form to show the estimated population, the number of births, the number of deaths &c., in each District of the Colony :—

Districts.	Population.	Births.	Birth Rate o/oo.	Deaths.	Death Rate o/oo
Port Louis ...	52,573	1,555	30.2	2,806	54.6
Pamplemousses ...	38,689	1,335	34.3	1,525	39.2
Rivière du Rempart.	27,958	1,308	47.7	737	26.9
Flacq ...	56,445	2,234	40.1	1,486	26.6
Grand Port ...	50,691	1,844	36.5	1,539	30.5
Savanne ...	35,956	1,235	34.5	989	27.6
Plaines Wilhems ...	63,985	2,224	34.8	2,038	31.9
Moka ...	36,328	1,364	37.9	987	27.4
Black River ...	13,635	396	28.5	609	43.9

Annexures VI & IX indicate in a tabular form the work done by the Sanitary Staff during the past year and the details of the contraventions taken.

It will be observed that during the year, the eight Sanitary Inspectors in charge of Port Louis paid 20,086 visits to private premises, 506 to Common Lodging Houses, 1743 to shops and stores and 1001 to stables and cowsheds. Besides paying visits as above and attending Court for the prosecution of contraventionists of Sanitary Regulations, the Inspectors were each on duty at the Central Office for three hours daily and they also performed duty in quarantine, either afloat or at the two quarantine stations, on 140 days during the year.

The work of inspection performed by Inspector Hauning, having already been brought to notice in the monthly statements furnished and submitted to the Council of Government, is not mentioned in these returns.

In connection with unwholesome food, defective drains, water pipes, &c., the night-soil service and the proper keeping up of premises, 5,598 contraventions were detected; of these 5,025 were abated and 573 were in abeyance on December 31st.

Contraventions of the Regulations about the straying of pigs were detected on 64 occasions and the contravening parties prosecuted.

The total amount of fines imposed on persons prosecuted for the above and other contraventions in Port Louis was Rs 1,487.25.

Report was made to the Municipality of 1,277 contraventions detected in connection with the scavenging service of the city.

756 public nuisances were reported, of these, 471 were abated by the Municipal Corporation or by the Public Works Department and 285 were in abeyance on December 31st.

The principal work done by the Sanitary bands in Port Louis, Mahebourg and Souillac during the year consisted in attending to the cleaning of drains, removal of sea weeds from the sea shore, and cleaning of waste lands and of places overgrown with rank vegetation, giving rise to nuisances and not falling within the duties of the Contractors.

It was thus possible to do a great deal of useful work and the advisability of extending the system to other Districts, instead of resorting to the employment of extra labour where a nuisance has to be abated, is engaging attention.

The water supply of Port Louis, as already pointed out on several occasions, is an impure one and the Municipal Corporation should give their attention to the question of ameliorating it.

The benefit derived by the inhabitants of that area of the city to which the drainage system has been applied, as evidenced by a diminished rate of mortality from diseases connected with dampness of the soil, has been brought out in a previous report* on the subject and is an indication of the advisability of extending the system of water-carriage to other parts of the city.

Annexure IX is a statement of all the Sanitary contraventions, collections, &c., in the Rural Districts for the year under consideration. Out of 4297 notices served, 3859 were complied with.

The amount of fines imposed on parties prosecuted for the various contraventions was Rs. 3,577.79.

The amount of the collections in the Cemeteries and Markets was Rs. 21,156.51.

The Sugar Estate Camps were reported on the whole as having been found in a satisfactory condition.

Noxious factories did not give rise to much trouble, no contraventions of any importance were reported and the notices

served for nuisances detected were usually complied with within reasonable delay.

Annexure VIII is a statement kindly supplied by the Honorable the Surveyor General of the work performed by his Department at the request of the Sanitary Authorities.

The performance of the Scavenging and Night-Soil Services has been much hampered owing to the mortality among the draught animals due to "surrea". This disease broke out in an epizootic form in the Northern Districts of the Island in March and gradually extended to the other Districts. The mortality was first noticed among bullocks, but the equines were shortly afterwards affected. The nature of the sickness was attributed to various causes, and at one moment, thought to be due to anthrax, but the microscopical evidence of the bacillus being wanting, further researches were made, and Dr Aimé Lesur of Flacq, recognized the existence of a worm-like parasite in the blood of a sick mule in April. A slide having been sent to the Sanitary Department, the organism was recognized to be a trypanosoma and the diagnosis "surrea" was then made. The discovery of the same parasite in the blood of sick cattle in the District of Plaines Wilhems was shortly afterwards made by Mr. Veterinary Surgeon Deixonne, and the existence of the protozoon in the alimentary canal of a fly stomoxyx was demonstrated by Mr. A. Daruty de Grandpré, whose subsequent experiments proved that the insect was an active agent in the transmission of the disease.

The disease was subsequently investigated by Professor Edington, of Cape Colony, who was specially asked to visit the Island for that purpose. Further reference to this epizootic is not necessary as the question has been fully discussed in the instructive communication of Dr Edington and in the reports of the Committees appointed to enquire into the matter. It will be sufficient to add that there is no consensus of opinion with regard to the origin of the disease, but there is strong evidence in support of the theory that the disease has existed in the Island for years and that it has become epizootic for as yet unknown causes, and that it was not introduced from India by cattle imported in 1901, as is believed by many.

VII.—VACCINATION.

The number of children vaccinated by Government Vaccinators in 1902 was 9515 and the operation was successful in 9351 cases.

In 164 cases a certificate of insusceptibility to vaccination was delivered in accordance with Article 12 of Ordinance N° 12 of 1873 and issued to the parents at their request generally.

In the vast majority of cases, calf lymph supplied by the Institut de Vaccine Animale, 8, Rue Ballu à Paris, was employed, and except once, in October, when the supply for some ill-explained reason gave but negative results, this lymph has continued to give entire satisfaction.

As a fairly large number of children are besides vaccinated by private practitioners, it will be observed, on comparing the number of vaccinations with that of births registered, and bearing in mind also the decrease due to deaths among infants, that the number of children in the Island who escape vaccination must be very small.

VIII.—PUBLIC HOSPITALS & DISPENSARIES.

The Hospital of Long Mountain was opened in the month of April, bringing the number of these Institutions, not reckon-

ing the Hospice of St. Lazare and the Prison Hospitals of Port-Louis and Beau Bassin, to 9.

The number of Dispensaries remained unchanged, of these 5 are permanent and 17 temporary.

The question of the final location of the Civil Hospital of Port Louis in the College buildings being still under consideration, the alterations and improvements which it would be desirable to effect to make them quite satisfactory have again been postponed, but this Institution, as it is, has nevertheless been sufficient to answer all practical requirements. Full details of the work done in the Hospital will be found in the very interesting and complete report of Dr Rouget which is annexed (Annexure X), but before leaving this subject, I feel it my duty to associate myself with the well deserved expression of regret which is paid in these pages to the memory of the late Dr. Antelme, the former Superintendent of the Institution, who, by his personal qualities, his devotion to his work, and his high attainments, had endeared himself to his *confrères* and occupied a preeminent position in his profession.

IX.—MISCELLANEOUS.

Quarantine.—Flat Island Quarantine Station was occupied on two occasions :—

(a.) From July 20th. to September 3rd. by the coolies ex S. S. "Warora" who were transferred thither from Cannoniers Point after the occurrence of cases of choleraic diarrhoea of a suspicious nature reported by Dr. Keess, the Surgeon Superintendent.

(b.) in November by the military passengers of the S. S. "Ortona", who were detained to complete 15 days of observation required by Article 43 of Ordinance N° 38 of 1897-1898, on account of the existence of small pox at Cape Town from which the vessel came.

Cannoniers Point was placed in quarantine for a few days on four occasions to permit of the disinfection of Immigrants from India. In one instance the quarantine period was prolonged under an order given in virtue of Ordinance N° 47 of 1898 on account of the occurrence of some cases of *dengue* notified by the Surgeon Superintendent, Dr. Keess. The disease did not spread.

One hundred and forty-three (143) vessels were placed in quarantine on arrival at Port Louis, 27 of these refused passage or left the Island after having accomplished their operations in quarantine, while the others were detained for a period varying from a few hours to a few days to complete the period of quarantine or be subjected simply to disinfection.

Medico-legal and Analytical Work.—I append an interesting report (Annexure X) from Dr. Paddle on the work done by him as Government Analyst in 1902. It will be observed that 43 investigations were undertaken at the request of the Judicial Department and necessitated the examination of 151 different articles, while 45 analyses were undertaken at the request of the Medical and Health Department and of other Departments, entailing the examination of 76 samples of different substances.

Though this has given a considerable amount of additional work to the Superintendent of the Lunatic Asylum, it is nevertheless desirable that more frequent routine examinations of alimentary products, beverages, drugs, &c., offered for sale, should be resorted to, and it is to be hoped that the matter may be settled this year as the Committee appointed to consider the

subject of the creation of an analytical and a bacteriological laboratory are shortly to submit their report on these questions.

The small bacteriological laboratory at the Civil Hospital has, under the care of Mr. Maya, the Pharmacist of the Institution, continued to prove very useful and has done good work both for the Department and for some private practitioners who have taken advantage of the facilities afforded by the laboratory to assist them in the diagnosis of cases of a doubtful nature, especially as regards the existence of diphtheria and of enteric fever.

Medical Stores.—The work at the Medical Stores has continued to be very heavy during the past year and has necessitated the employment of temporary assistants at various periods.

The annexed return (Annexure XII) shows in detail the amount of work which this Branch of the Department had to cope with.

X.—DEPARTMENTAL.

Before closing this report, I beg to record that, as has been the case for the last few years, the energies of all the Officers of this Department have again been heavily taxed during 1902 ; the amount of work they have had to cope with having been as considerable as in the previous years.

There can be no question as to the necessity of relieving the Officers of the Head Quarter Staff of a great part of this strain, but, as the need of some addition to the medical and clerical Branches of the Department and of certain modifications which it is desirable to introduce in its organization have formed the subject of an enquiry by a special Commission appointed by His Excellency the Governor in March of last year, and whose report has not yet been published, I will abstain from any remarks upon these important questions in this document.

In conclusion, I must express my thanks to Dr. Momplé, Acting Assistant Sanitary Warden and to Mr. Viader for the assistance they have given me in compiling statistics and preparing notes for me to draw up this report.

H. LORANS,

M.B.C.M., D.P.H., EDIN.

Acting Director,
Medical and Health Department.

18th April 1903.

TABLE I.

RETURN OF THE STATISTICS OF POPULATION FOR THE YEAR 1902.

		Chinese.		TOTAL.	
		Indians.		Africans.	
				Europeans, Whites, Mixed and Coloured.	
		Number of inhabitants on 31st. December	1901	1902	1901
		Births during the year	1902	1902	107,217
		,, Deaths,,	1902	1902	3,719
		,, Immigrants,,	1902	1902	4,127
		,, Emigrants,,	1902	1902	1,681
		Number of inhabitants on 31st. December	1902	1902	1,642
		Increase	...	...	106,848
		Decrease	...	...	...
					261,924
					9,776
					8,589
					3,851
					2,991
					432
					...
					...
					...
					...
					...
					...
					...
					3,471
					13,495
					12,716
					8,676
					6,239
					373,044
					5,009
					376,260
					1,538
					3,216
				

TABLE II.

I

METEOROLOGICAL RETURN FOR THE YEAR 1902.

TEMPERATURE.		RAINFALL.		WINDS.		WINDS.	
Solar Maximum.	Minimum on Glass.	Shade Maximum.	Shade Minimum.	Range.	Mean.	Amount in Inches.	Degree of Humidity.
154.9	58.5	87.5	64.7	22.8	77.8	2.20	72.8
155.2	62.5	88.1	67.8	20.3	77.8	17.52	79.8
159.2	61.7	85.2	67.4	17.8	76.2	5.20	78.2
148.7	53.4	85.6	62.2	23.4	75.3	1.66	78.3
146.2	51.8	83.0	59.6	23.4	72.4	1.88	75.9
139.3	49.5	81.0	59.7	21.3	70.5	1.65	75.5
137.5	47.5	78.3	56.2	22.1	69.0	2.06	76.0
145.0	44.8	80.3	51.9	28.4	69.4	0.58	73.9
146.5	46.1	81.8	55.4	26.4	70.7	1.25	71.2
151.4	53.0	85.8	61.0	24.8	73.7	1.94	71.2
152.7	51.8	89.9	59.3	30.6	76.6	1.32	69.4
153.5	63.3	88.5	68.0	20.5	78.1	9.85	78.6
For the year ...	...	149.2	53.7	84.6	61.1	23.5	74.0
							47.11
							75.1
							10.1
							E. S. E. & S.

RETURN OF DISEASES AND DEATHS IN 1902.

Diseases.	Remaining at end of 1901.	Yearly Total.		Total Cases treated.	Remaining at end of 1902.
		Admis-sions.	Deaths.		
GENERAL DISEASES.					
Small Pox ...	...	...	...	...	...
Meas' es ...	...	...	98	1	98
Typhus ...	...	...	...	...	...
Dengue ...	...	...	...	...	...
Cholera ...	...	...	...	...	...
Yellow Fever ...	...	...	...	...	...
Beriberi ...	...	...	10	...	10
Yaws ...	...	...	...	...	...
Influenza ...	...	4	772	19	776
Diphtheria ...	...	...	7	2	7
Febricula ...	...	...	...	...	...
Enteric Fever ...	...	1	36	9	37
Dysentery ...	...	17	673	84	690
Plague ...	...	...	32	17	32
Malarial Fever—					
(a) Intermit-tent.	Quotidian ...	17	1,513	22	1,530
	Tertian ...	...	90	...	90
	Quartan ...	...	33	...	33
	Irregular ...	4	260	...	264
	Type undiagnosed.	5	1,294	8	1,299
(b) Remittent	...	1	159	2	160
(c) Pernicious	...	...	11	3	11
Erysipelas ...	...	...	68	8	68
Pyæmia ...	...	...	1	1	1
Septicæmia ...	...	...	7	5	7
Tetanus ...	...	...	11	9	11
Tubercle ...	...	24	1,133	216	1,157
Gonorrhœa ...	...	3	218	...	221
Carried over ...	76	6,426	406	6,502	142

RETURN OF DISEASES AND DEATHS IN 1902.

Diseases.	Remaining at end of 1901.	Yearly Total.		Total Cases treated.	Remaining at end of 1902.
		Admissions.	Deaths.		
Brought forward ...	76	6,426	406	6,502	142
GENERAL DISEASES.—Contd.					
Hydrophobia
Scurvy	8	.....	8
Parotitis	3	.....	3
Pertussis
Rheumatic Fever	59	.....	59
Rheumatism	10	606	3	616
Gout	2	.....	2
Leprosy—					
(a) Tubercular	4	.....	4
(b) Anæsthetic	12	1	12
Syphilis—					
(a) Inherited	15	6	15
(b) Primary	9	90	1	99
(c) Secundary	4	119	2	128
(d) Tertiary	3	91	7	94
Alcoholism	21	.....	21
Delirium Tremens	2	.....	2
Anæmia	15	409	20	424
Debility	16	561	62	577
Diabetes Mellitus	1	12	1	13
,, Insipidus	1	.....	1
New Growth—					
(a) Non Malignant	12	51	1	53
(b) Malignant	47	5	47
Other Diseases	114	10	114
Carried over ...	136	8,653	525	8,789	222

RETURN OF DISEASES AND DEATHS IN 1902.

Diseases.	Remaining at end of 1901.	Yearly Total.		Total Cases treated.	Remaining at end of 1902.
		Admis-sions.	Deaths.		
Brought forward ...	136	8,653	525	8,789	222
LOCAL DISEASES.					
Nervous System—					
Section 1	Neuritis ...	5	5	5	.....
	Meningitis ...	19	14	19	2
	Myelitis ...	2	15	17	.....
	Hydrocephalus ...	1	.....	1	.....
	Encephalitis ...	1	1	1	.....
	Congestion of Brain ...	2	11	13	1
	Abscess of Brain ...	.....	.....	.....	.....
	Cerebral Hæmorrhage ...	17	11	17	.....
Section 2	Paralysis ...	3	58	61	6
	Epilepsy ...	3	76	79	6
	Chorea ...	2	.....	2	.....
	Neuralgia ...	4	136	140	.....
	Hysteria ...	1	24	25	.....
Section 3	Idiocy ...	9	.....	9	.....
	Mania ...	2	35	37	.....
	Melancholia ...	.....	8	8	.....
	Dementia ...	2	10	12	.....
	Delusional Insanity ...	1	4	5	.....
	General Paralysis ...	.....	.....	.....	.....
Other Diseases ...	1	30	3	31	1
Diseases of the Eye—					
Conjunctivitis ...	1	43	.....	44	1
Keratitis ...	1	48	.....	49	2
Iritis ...	1	23	.....	24	2
Retinitis ...	...	2	.....	2	.....
Cataract ...	4	112	.....	116	3
Ophthalmia Tarsi ...	...	27	.....	27	2
Other Diseases (Eye System) ...	1	39	.....	40	1
Carried over ...	165	9,408	571	9,573	240

RETURN OF DISEASES AND DEATHS IN 1902.

Diseases.	Remaining at end of 1901.	Yearly Total.		Total Cases treated.	Remaining at end of 1902.
		Admissions.	Deaths.		
Brought forward ...	165	9,408	571	9,573	249
LOCAL DISEASES.—Contd.					
Diseases of the Ear—					
Otitis	1	21	...	22
Necrosis
Abscess	1	...	1
Other Diseases	8	...	8
Diseases of the Nose—					
Epistaxis...	1	...	1
Rhinitis	6	...	6
Ozœna	1	...	1
Circulatory System—					
Pericarditis	1	...	1
Hypertrophy Cordis...	7	1	7
Valvular Disease	8	224	49	232
Aneurism	5	...	5
Other Diseases	8	...	8
Respiratory System—					
Asthma	5	180	1	185
Laryngitis	2	11	1	13
Bronchitis	11	1,013	21	1,024
Pneumonia	9	414	134	423
Pleurisy	2	51	2	53
Other Diseases	12	3	12
Carried over ...	203	11,372	783	11,575	301

RETURN OF DISEASES AND DEATHS IN 1902.

Diseases.	Remaining at end of 1901.	Yearly Total.		Total Cases treated.	Remaining at end of 1902.
		Admissions.	Deaths.		
Brought forward ...	203	11,372	783	11,575	301
LOCAL DISEASES.—Contd.					
Digestive System—					
Stomatitis	1	50	...	51
Tonsillitis	26	...	26
Gastritis	3	115	1	118
Ulcus Ventriculi
Euteritis	5	129	13	134
Appendicitis	4	...	4
Hernia	49	1	49
Hæmorrhoids	2	89	...	91
Fistula in Ano	2	26	...	28
Hepatitis	3	63	3	66
Cirrhosis of Liver	3	64	10	67
Suppuration of Liver	2	15	7	17
Biliary Calculus	12	...	12
Peritonitis	16	8	16
Diarrhoea	12	490	48	502
Other Diseases	2	230	10	232
Lymphatic System—					
Splenitis	10	1	10
Hypertrophia Splenis	4	457	23	461
Adenitis	5	104	...	109
Lymphangitis	3	36	2	39
Lymphangiectasis
Abscess of Spleen	1	1	...
Carried over ...	250	13,358	911	13,608	345

RETURN OF DISEASES AND DEATHS IN 1902.

Diseases.	Remaining at end of 1901.	Yearly Total.		Total Cases treated.	Remaining at end of 1902.
		Admissions.	Deaths.		
Brought forward ...	250	13,358	911	13,608	345
LOCAL DISEASES.—Contd.					
Urinary System—					
Nephritis	9	333	51	342
Pyelitis
Cystitis	5	85	4	90
Chyluria	2	...	2
Calculus	7	...	7
Hæmaturia	12	...	12
Other Diseases	19	3	19
<i>Generative System : — Male Organs</i>					
Stricture of Urethra	2	49	1	51
Prostatitis	3	...	3
Phimosis	21	...	21
Paraphimosis	...	1	15	...	16
Ulcus Vener. Molle	1	98	...	99
Hydrocele	...	2	91	...	93
Orchitis	1	77	...	78
Other Diseases	41	1	41
<i>Female Organs—</i>					
Oöphoritis	7	...	7
Parametritis	1	...	1
Metritis	27	...	27
Endometritis	10	...	10
Displacements of Uterus	18	...	18
Carried over ...	271	14,274	971	14,545	379

RETURN OF DISEASES AND DEATHS IN 1902.

Diseases.	Remaining at end of 1901.	Yearly Total.		Total Cases treated.	Remaining at end of 1902.
		Admissions.	Deaths.		
Brought forward ...	271	14,274	971	14,545	379
LOCAL DISEASES.—Contd.					
<i>Female Organs—Continued.</i>					
Rupture of Uterus
Vaginitis	16	1	16
Amenorrhœa	5	...	5
Menorrhagia	6	...	6
Metrorrhagia	8	...	8
Abortion	8	...	8
Post partum Hæmorrhage
Mastitis	5	...	5
Abscess of Breast	11	...	11
Parturition	...	2	93	...	95
Pregnancy	25	...	25
Other Diseases	48	...	48
<i>Organs of Locomotion—</i>					
Osteitis	18	...	18
Caries	13	...	13
Necrosis	4	14	...	18
Periostitis	8	...	8
Synovitis	11	...	11
Arthritis	1	48	2	49
Ankylosis	8	...	8
Ganglion
Other Diseases	14	...	14
Carried over ...	278	14,633	974	14,911	392

RETURN OF DISEASES AND DEATHS IN 1902.

Diseases.	Remaining at end of 1901.	Yearly Total.		Total Cases treated.	Remaining at end of 1902.
		Admissions.	Deaths.		
Brought forward ...	278	14,633	974	14,911	392
LOCAL DISEASES.—Contd.					
Cellular Tissue—					
Cellulitis ...	...	9	202	6	211
Gangrene	...	...	25	12	25
Elephantiasis	...	...	24	...	24
Abscess ...	...	11	265	2	276
Other Diseases	...	1	15	...	16
Diseases of the Skin—					
Erythema	...	...	...	...	...
Eczema ...	...	13	153	...	166
Impetigo...	...	1	128	...	129
Psoriasis ...	...	...	5	...	5
Herpes ...	...	...	9	...	9
Zona ...	...	...	1	...	1
Pemphigus	...	...	1	...	1
Carbuncle	...	...	31	...	31
Furunculus	...	3	42	...	45
Paronychia	...	...	18	...	18
Lupus ...	...	...	1	...	1
Ulcus ...	...	9	327	1	336
Other Diseases	...	3	52	2	55
Injuries—					
General	Burns ...	1	19	5	20
	Lightning Stroke ...	...	...	...	...
	Asphyxia...	...	1	1	1
Other	Shock ...	...	3	2	3
	Injuries Internal Hæmorrhage.	...	1	1	1
Carried over	329	15,956	1,006	16,285	441

RETURN OF DISEASES AND DEATHS IN 1902.

Diseases,	Remaining at end of 1901.	Yearly Total.		Total Cases treated.	Remaining at end of 1902.
		Admissions.	Deaths.		
Brought forward ...	329	15,956	1,006	16,285	441
LOCAL INJURIES.					
Burns and Scalds ...	2	25	3	27	2
Bruise ...	...	371	...	371	4
Wound ...	17	608	3	625	16
Spain ...	...	25	...	25	1
Dislocation ...	...	16	...	16	...
Fracture ...	9	98	5	107	6
Gunshot Wound ...	1	5	1	6	...
Contusion ...	...	8	...	8	...
Malformations—					
Head ...	...	...	...	...	...
Thorax ...	...	1	...	1	...
Abdomen ...	...	...	...	...	...
Upper limb ...	...	1	...	1	...
Lower limb ...	...	2	...	2	...
Hare Lip ...	...	3	...	3	...
Dwarf ...	...	1	...	1	...
Poisons—					
Mineral ...	...	6	...	6	...
Vegetable ...	...	8	...	8	3
Animal ...	...	3	...	3	...
Parasites—					
Tape Worms ...	...	1	...	1	...
Round Worms ...	...	37	...	37	...
Thread Worms ...	...	7	...	7	...
Itch ...	4	224	...	228	8
Not specified* ...	17	468	...	485	8
Total ...	379	17,874	1,018	18,253	489

* Includes mother admitted with their sick children and vice versa, malingering, &c.

RETURN OF DISEASES AND DEATHS IN 1902.

DISEASES.	Remaining at end of 1901.	Yearly Total.		Total Cases treated.	Remaining at end of 1902.
		Admissions.	Deaths.		
New Born* ..	...	1	62	3	63
Still Born ...	...	...	8	8	8
Premature Birth	...	...	6	5	6
		1	76	16	77
	Total...				1
<i>Return of Mental Diseases.</i>					
(LUNATIC ASYLUM.)					
Idiocy ...	...	2	8	3	10
Mania ...	...	209	97	17	306
Melancholia ...	...	10	25	3	35
Dementia ...	...	120	16	3	136
Delusional Insanity	...	48	...	...	48
	Total...	389	146	26	535
					403

* 16 children were shortly after birth returned under the different diseases from which they were found to be suffering.

H. LORANS,

18th. April, 1903.

Acting Director.

II

Statement showing the number of plague cases and the percentage mortality for the years
1899—1900—1901—1902 to 31st. March 1903.

A. EPIDEMIC PERIOD—B. QUIESCENT STAGE.

DISTRICTS.	January to May 1899.			June 1899 to March 1900.			April 1900 to July 1900.			August 1900 to March 1901.			April to August 1902.			Sept. 1901 to March 1902.			April to August 1902.			Sept. 1902. to March 1903.		
	Cured.	Death.	Cured.	Cured.	Death.	Cured.	Cured.	Death.	Cured.	Cured.	Death.	Cured.	Cured.	Death.	Cured.	Cured.	Death.	Cured.	Cured.	Death.	Cured.	Cured.	Death.	
A	Port-Louis ..	...	172	698	...	...	94	334	...	...	180	593	...	...	62	...	213	...	...	3	...	...	...
	Pamplemousses ..	...	24	88	...	...	30	74	...	...	14	26	...	...	...	...	...	...	...	...	...	...	...
	Rivière du Rempart ..	...	32	99	...	...	57	108	...	...	26	43	...	...	...	...	...	...	...	...	...	...	...
	Flacq ..	...	2	1	...	...	6	15	...	...	14	32	...	...	...	...	...	...	...	...	...	...	...
	Grand Port...	...	3	2	...	...	5	11	...	...	2	2	...	...	1	1	1	1	1	1	1	1	1
	Savanne ...	...	15	63	...	...	6	7	...	...	1	3	...	...	24	44	...	...	...	...	...	...	...
	Paines Wilhems ..	...	68	207	...	...	21	91	...	...	55	84	...	...	...	...	...	...	...	...	...	...	...
	Black River ..	...	5	5	...	...	1	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Moka ...	...	3	9	...	...	1	1	...	...	...	1	...	...	1	1	1	1	1	1	1	1	1
B	Total No. of Cases...	...	319	1,172	...	...	220	644	...	...	292	784	...	...	1,076	351	...	...	...	...	...	...	...
	Percent of death...	...	78.6	78.6	...	...	864	74.5	...	...	72.9	74.9	...	...	...	74.9	...	...	...	...	...	...	...
	Port-Louis ...	3	16	2	...	...	10	...	...	...	4	9	...	...	1	12	3	...	...	...	...	...	...
	Pamplemousses ..	...	2	...	...	...	...	...	...	...	1	6	...	...	...	...	...	...	...	...	...	...	...
	Rivière du Rempart ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Flacq ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Grand Port ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Savanne ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Paines Wilhems ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total No. of cases...	Black River ..	...	3	18	...	...	3	15	...	...	5	20	...	...	5	25	...	...	...	...	...	...	...
	Moka ...	...	3	18	...	...	3	15	...	...	3	20	...	...	3	21	...	...	...	...	...	...	...
	Percent of death...	...	88.3	85.7	...	...	85.7	80.	...	...	87.5	87.5	...	...	3	24	...	...	...	...	...	...	...

Statement showing the number of plague cases discovered in the Colony in 1900 and the deaths among them.

Statement showing the number of plague cases discovered in the Colony in 1901 and the deaths among them.

V

PLAQUE 1902

Month	Port Louis	Pamp.	R. du Remp.	Flacq	Grand Port	Plaines Wilhems	Moka	Black River	Total.		Deaths	Recoveries	Total						
									Deaths	Recoveries									
January	39	6	45	4	1	5	3	2	516	420	28	82	22	104
February	10	4	14	3	3	6	2	4	2	6	19	34	15	49
March	7	1	8	4	1	5	1	1	1	1	12	22	15	37
April	2	...	...	...	...	...	...	1	3	1	4
May
June	1	...	...	...	...	...	...	...	...	...	...
July	5	...	5	...	...	...	...	...	...	...	...	...	...	...
August	7	1	8	23	...	...	...	...	...	...	...	...	...	...
September	19	4	14	72	...	...	...	1	1	1	...	...	...	...
October	58	14	29	102	1	...	...	1	1	1	...	2	...	...
November	75	11	53	2	...	...	...	2	2	2	...	23	7	30
December	42	11	11	5	5	10	20	6	26	1	1	2	1	3
Total	262	68	330	17	5	22	5	10	20	6	178	34	112	2

STATEMENT OF ALL SANITARY CONTRAVENTIONS,

DISTRICTS.	Contraventions.							Notices Served.					
	No. of.			No. of cases in which parties were warned and articles seized and destroyed.		No. of parties prosecuted.		Rs.		Amount of Fines.		Under Regn. 96 of 1877.	
Pamplemousses —Lower	...	78	3	...	...	...	...	...	...	37	...	25	...
do. —Upper	...	581	4	56	150	75	...	...	...	...	...	344	177
Rivière du Rempart	...	110	7	26	130	52	...	...	...	13	...	27	37
Flacq —Northern	...	1,252	806	134	271	...	13	...	...	69	7	186	57
do. —Southern	...	314	3	1	5	...	...	...	...	14	9	279	1
Grand Port	...	688	4	224	584	75	...	...	...	160	547	239	...
Rose Belle	...	377	7	8	44	...	5	9	...	150	...	206	1
Savanne	...	374	2	46	328	...	100	...	...	138	...	20	5020
Plaines Wilhems —Lower	...	820	10	79	327	...	...	...	...	200	112	321	98
Quatre Bornes	...	133	2	15	216	...	...	...	...	35	...	82	1
Vacoas	...	91	5	17	85	...	...	...	...	35	...	34	...
Curepipe	...	503	4	94	369	25	...	...	...	161	...	252	...
Moka	...	308	5	21	38	...	68	...	...	15	...	14	185
Black River	...	385	4	86	90	...	...	...	...	151	11	130	...
Total	6,014	866	807	2,639	27	100	95	...	1,178	144	47	2,159
											497	5	25020

DETAILS OF

COLLECTIONS, &c. FOR THE YEAR 1902.

Complied with.	Not complied with.	Abattoirs.										Cemeteries.					Markets.														
		No. of parties prosecuted for non compliance with.		Amount of Fines.		No. of Private.		No. of Public.		No. of Animals killed in each Public Abattoir.		Oxen.	Cows.	Calves.	Swine.	Goats.	Sheep.	Oxen.	Cows.	Calves.	Swine.	Goats.	Sheep.	Oxen.	Cows.	Calves.	Swine.	Goats.	Sheep.	No. of	Rs.	c.	Amount of Fees collected.
Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.	Rs.	c.	Oxen.	Cows.	Calves.	Swine.	Goats.	Sheep.	Oxen.	Cows.	Calves.	Swine.	Goats.	Sheep.	Oxen.	Cows.	Calves.	Swine.	Goats.	Sheep.	No. of	Rs.	c.	Amount of Fees collected.
62
480	41	41	...	114	...	1	...	1	16	49
71	6	6	...	3	02	49
224	30	29	...	211	75	2
304	3	3	...	15
389	71	51	...	96	50	...	1	31	55	...	86	202	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
345	17	17	...	88	...	2
265	43	43	...	158	...	3	1	31	...	...	52	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
691	40	40	...	129	75	...	1	91	109	...	406	482	426	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
117	1	1	...	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
59	2	1	...	3	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
392	8	8	...	10	50	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
250	32	4	...	35	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
210	32	32	...	64	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3,859	326	276	...	938	52	11	4	169	164	...	593	733	427	1	54	22	8,849	16,043	50	5	5,113	01	...	...	...	...	...	...	...

* Rs. 224—Abattoir Fees.

† Rs. 2,631—Abattoir Fees.

§ Re-opening Vault.

CONTRAVENTIONS.

Regn. 263 of 1893.	Ordce. 32 of 1894-95.	Regn. 130 of 1898.	Ordce. 8 of 1898.	Regn. 25 of 1900.	Regn. 167 of 1900.	Ordce. 35 of 1863.	Regn. 497 of 1900.	Ordce. 18 of 1896.	Regn. 167 of 1890.	Regn. 498 of 1900.	Regn. 243 of 1902.	Regn. 32 of 1872.	Total Amount of Fines.		
													Rs.	c.	
46	1	150	75
13	1	21	130	52
10	...	18	2	271	5
111	2	...	...	3	...	1	1	1	2	2	3	5	584	44
...	328	327	
...	327	216	
...	85	85	
...	369	38	
...	90	90	
...	2639	27	

F. R. MOMPLÉ,

4. 4. 1903.

Acting Sanitary Warden.

Annual Report on the Civil Hospital for 1902.

The total number of patients admitted into the Civil Hospital in 1902 was 6092. This is the highest number on record for the last eleven years, not even excepting 1892, the year of the Great Cyclone, as can be seen from the following Table.

TABLE I.

Year	Admissions	Deaths
1892	5273	496
1893	5347	541
1894	4544	316
1895	4937	350
1896	5117	372
1897	5039	320
1898	5658	356
1899	5230	418
1900	5260	410
1901	5554	509
1902	6092	428

2.—In Table II the admissions are classified according to their nationalities into Europeans, Creoles, and Asiatics. If this year's return be compared with last year's it is seen that the excess in 1902 is due solely to a considerable increase in the number of creole patients.

TABLE II

Nationalities					1901	1902
Europeans	...	...	...	...	241	129
Creoles	...	...	...	...	3622	4334
Asiatics	...	...	...	...	1691	1629
Total					5554	6092

3.—The total number of patients treated was 6201 and the daily average number in Hospital was 209 as against 192 in 1901. Table III gives the daily average number of male and female patients in 1901 and 1902.

TABLE III.

Years.	Daily average number in Hospital.		
	Males.	Females.	Total.
1901 ...	141	51	192
1902 ...	150	59	209

4. Table IV is a General Statement of Admissions, Discharges and Deaths in 1902.

TABLE IV.

	Males.	Females.	Total.
Number remaining at end of 1901. ...	74	35	..... 109 } 6201
Number admitted in 1902.	4668	1424	..... 6092 }
Total number treated in 1902....	4742	1459	..... ... 6201
Number discharged. { Cured ...	2956	829	3785 }
Number relieved ...	1085	340	1425 }
Number not improved. ...	295	92	387 }
Number died ...	327	101	..... 428 } 6201
Number remaining at end of 1902. ...	128	48	..... 176 }

Those who left hospital without improvement were discharged upon their own request or that of their relatives, and, usually, against the advice of the attending medical officers. They were for the most part patients suffering from chronic or incurable ailments who had, not unfrequently, to come back to hospital shortly after, worse than ever.

5. There were 428 deaths during the year as compared with 509 in 1901.

TABLE V.

Years.	Number of patients treated.	Number of deaths.	Death-rate per cent of patients
1901..	5684	509	8.9
1902...	6201	428	6.9

It results from the above table that the patients' death rate was much lower in 1902 than in the preceding year, although, as usual, a large proportion of the patients were admitted in a dangerous when not in a dying state.—

Table VI shows that no fewer than 118 deaths, or more than one fourth of the total number, occurred within 72 hours after admission.

TABLE VI.

Patients who died within 24 hours after admission.	Patients who died between 24 & 48 hours after admission	Patients who died between 48 & 72 hours after admission.
82	30	6

6. The most prevailing diseases were Malaria, Tuberculosis and Bronchitis. Next came Dysentery, Influenza, Pneumonia, Rheumatism, Hypertrophy of Spleen and Debility.

Table VII gives a comparative statement of the chief complaints treated in 1901 and 1902.

TABLE VII.

Diseases.	Cases.		Deaths.		Case-mortality.	
	1901	1902	1901	1902	1901	1902
Malaria	841	1124	16	4	1.9 p. c.	.35 p. c.
Tuberculosis	403	554	131	106	32.5 "	19. "
Bronchitis	388	482	5	9	1.3 "	1.8 "
Rheumatism	261	295	—	3	—	1. "
Influenza	293	261	6	4	2. "	1.5 "
Pneumonia	140	221	51	71	36.4 "	32.1 "
Dysentery	208	220	49	36	23.5 "	16.3 "
Hypertrophy of Spleen	266	175	—	2	—	1.1 "
Ancæmia ...	129	155	4	6	3.1 "	4. "
Debility	107	141	28	23	26.2 "	16.3 "
Diarrhoea	229	143	36	16	15.2 "	11.2 "
Bright's disease	97	112	24	22	24.7 "	19.6 "
Plague	62	28	22	15	45.1 "	53.9 "
Syphilis	24	25	6	2	23.9 "	8. "
Injuries	357	318	6	7	1.6 "	2.2 "

It would appear from the above table that Malaria, Tuberculosis, Bronchitis and Pneumonia are chiefly responsible for the increase in the admissions of 1902 over 1901 and that the difference in the death rate in favour of 1902, is, to a great extent, due to the lower case mortality of Malaria, Dysentery and Tuberculosis this year.

7. Table VIII shows the number of admissions and deaths during the four quarters of the year in 1901 and 1902.

TABLE VIII.

	Admissions.		Deaths.	
	1901	1902	1901	1902
First Quarter	1562	107	115	102
Second Quarter	1620	1497	140	87
Third Quarter	1312	1490	138	122
Fourth Quarter	1060	1598	116	117
Total	5554	6092	509	428

8.—The following table gives the comparative prevalence of the most important diseases at different seasons of the year.

TABLE IX.

Months	Malaria	Hypertrophy of spleen	Anæmia	Debility	Dysentery	Rheumatism	Tuberculo- sis	Influenza	Respiratory Diseases	Plague
January ...	64	14	11	6	15	21	34	...	52	3
February ...	109	19	12	5	10	18	40	...	41	2
March ...	135	14	10	16	23	34	60	3	49	1
April ...	209	13	10	11	13	24	29	1	56	...
May ...	128	21	11	13	17	34	34	...	71	1
June ...	81	31	5	14	16	22	32	70	53	...
July ...	53	17	3	10	21	21	63	62	69	2
August ...	47	9	18	21	15	21	56	31	48	...
September ...	58	6	25	14	23	27	45	23	49	1
October ...	55	17	17	9	22	29	38	23	76	4
November ...	74	8	19	16	14	22	47	26	97	4
December ...	107	6	14	6	24	20	67	21	78	10
Total ...	1120	175	155	141	213	293	545	260	739	28

Malaria prevailed most in February, March, April, May and December ; Influenza in June and July, Plague in December. The largest number of Broncho-Pulmonary cases occurred in November and not in the winter season as one would be inclined to expect. The other diseases did not show any marked tendency to preponderate at any particular season.

9. *Measles*.—There was in 1902 an epidemic of measles which prevailed during the third quarter of the year. Thirty two cases came under our notice in Hospital. Only one of these ended fatally from Pulmonary complication.

10. *Beriberi*.—This disease has long been existing in a sporadic form among the Chinese residents of this Colony. In 1902 eight cases were admitted viz : 3 in October and 5 in December. The patients were, as usual, all Chinese. The cases were characterised by marked symptoms of Peripheral Neuritis affect-

ing chiefly the lower extremities and by Anæmia, but only a small proportion showed œdema. Two were discharged at their own request, relieved for the time being, and six were still in Hospital at the end of the year. The presence of so many cases of Beriberi at a time in Hospital is altogether exceptional and shows that the disease is decidedly on the increase. As nearly all the patients were new immigrants, it would appear that this outbreak was due to fresh importation.

11. *Enteric Fever*.—There were six cases of Enteric Fever all of which ended in recovery. In each case the diagnosis was confirmed by Widal's sero-reaction. The treatment with cold baths has hitherto proved very successful in our hands.

12. *Dysentery*.—213 cases of Dysentery were admitted during the year and 220 cases were treated. Of these 36 died.

TABLE X.

	Cases	Deaths
Dysentery Acute ...	142	2
,, Chronic ...	78	34
Total 	220	36

As can be seen from Table X, the case mortality of Dysentery was much lower this year than in 1901.—Still the death rate from this disease was high, owing mainly to the fact that nearly all the cases were admitted in an advanced stage. Nevertheless, the saline treatment gave excellent results in the acute cases as only two deaths occurred out of a total of 142 patients. The Chronic cases, which were nearly all characterised by oldstanding intestinal ulcerations, Anæmia and Debility proved intractable and accounted for 34 out of the 36 deaths. In fact, nearly 50 per cent of the Chronic cases died. It is much to be regretted that patients suffering from this common complaint repair to Hospital only after they have exhausted all quack remedies and very often come under our care in a hopeless condition.

13. *Plague*.—28 cases of Plague were diagnosed in this Hospital in the course of 1902 as compared with 62 in 1901.

The patients were either admitted with the disease or developed Plague symptoms shortly after admission.

The highest number admitted in a month (viz :—10) was found in December. In no case was the disease contracted in Hospital. Thirteen of the patients were transferred to the Plague Hospital. Fifteen, too low to be removed with safety, died in this Hospital.

14. *Malaria*.—There was an increased prevalence of Malaria in 1902 as compared with the preceding year, the number of admissions being 1,120 in 1902 and 813 in 1901.

The total number of cases treated was 1,120 which were classified as follows, according to their clinical type.

TABLE XI.

Return of Malaria.			Cases.	Deaths.
Intermittent	...	...	...	...
(1.) Quotidian	...	...	230	1
(2.) Tertian	...	...	8	...
(3.) Quartan	...	...	...	...
(4.) Irregular	...	...	7	...
(5.) Type undiagnosed	...	...	845	...
Remittent	...	...	29	2
Pernicious	...	...	1	1
Total...	1,120		4	

In the great majority of the cases, nearly 4/5, the type of the fever could not be ascertained because the patients had, while in Hospital, only one single Malarial attack and because no reliable information could be obtained from them as regards previous attacks.

The low death-rate of Malaria recorded every year in the Hospital returns shows that this disease is responsible to a much less extent than is generally believed for the deaths occurring among the general population.

In addition to the above Malarial cases, there were 175 cases of Hypertrophy of the Spleen of Malarial origin.

These, together with a few cases returned under Anæmia, because the latter condition predominated, were cases formerly designated as "*Malarial Cachexia*". It is from the ætiological standpoint to be regretted that the new classification loses sight of the true nature of these pathological conditions which are really nothing but chronic manifestations of malarial infection and could therefore very properly be described under the name of *Chronic Malaria*.

15. *Tuberculosis*.—There was a far larger number of admissions for Tuberculosis in 1902 than in the preceding year. No fewer than 554 cases of this nature were treated (as against 403 in 1901), of which the great majority were cases of Phthisis.

This disease, the most fatal of the complaints met with in Hospital, account for one fourth of the total number of deaths for the year.

There can be no doubt that Tuberculosis is one of the most prevailing diseases of this town and that, as the late Dr Antlme rightly remarked in last year's report, its prevalence is kept up by poverty, alcoholism, carelessness and ignorance. In presence of the above figures, which speak for themselves, one cannot help considering the creation of a Sanatorium for tuberculous patients highly desirable and I sincerely hope that this question will be taken in hand at no distant date.

16. *Anæmia and Debility*.—Cases of Anæmia and Debility which are seen in Hospital are usually associated with poverty and privation, when not brought on by Malaria. In many instances this year, Debility was the consequence of Senile decay. Both affections prevailed to a greater extent in 1902 than in the preceding year (vide Table VII).

17. *Syphilis*.—There were 110 admissions for Syphilis in 1902 as compared with 85 in 1901. The total number treated was 114 viz :

TABLE XII.

		Cases	Deaths
Inherited	...	...	4
Primary	...	...	41
Secondary	...	...	14
Tertiary	...	...	5
Total	...	114	6

There were 6 deaths viz :—one from infantile Syphilis (inherited) and five from tertiary symptoms.

18. *Diseases of the Respiratory System*.

There was in 1902 a large increase in the cases of Bronchitis and Pneumonia over 1901, as can be ascertained from Table VII. We had no fewer than 71 deaths from Pneumonia, the case mortality of the disease being 32.1 per cent. This unsatisfactory result is mainly due to the fact that a large proportion of the cases were admitted almost in a dying condition.

19. *Diseases of the Urinary System*.—The number of patients suffering from Bright's disease was 110 as against 97 in 1901. It is difficult to satisfactory account for the increased frequency with which renal affections are now met with in the practice of this Hospital. This interesting point is open to serious investigation.

20. *Injuries*.—The various kinds of injuries treated in 1902 are classified as follows :

TABLE XIII.

Injuries	Cases	Deaths	Remarks.
General	...		
Burns	...	3	cases of extensive burns involving thorax and abdomen.
Shock	...	2	
Internal haemorrhage	1	1	patient had been run over by a cart.
Local	...		
Burns	...	12	
Bruise	...	88	
Wound	...	162	
Sprain	...	18	
Dislocation	...	5	
Fracture	...	27	The fatal case was one of fracture of skull.
Total	318	7	

19. *Widwifery notes.*—There were 48 cases of Confinement in 1902 viz :

Full term delivery...	...	43
Premature	„	5
		—
Total...	...	48

In all the cases but three, labour was normal. Forceps had to be applied in two cases of *Inertia Uteri* and in one case of justo minor pelvis delivery could only be effected after craniotomy had been performed on the dead child, through the dilated Cervix. Forty three children were born alive and five were born dead.

SURIGICAL OPERATIONS.

Return of Surgical Operations.

TABLE XIV.

Operations	Cases	Results			Anæsthetics used		
		Unred	Relieves	Died	Chloro-form	Cocaine	Cloride of Ethyle
Amputations	13	12	...	1	12	1	...
Removal of Tumours...	10	9	...	...	4	6	...
Excision (lower 2/3 of fibula)	1	1	...	...	1	...	...
Operations on the Eye ...	4	3	1	...	1	3	...
" " " Mouth ...	2	2	...	...	2	...	...
" " " Skull ...	2	1	...	1	2	...	...
" " " Abdomen...	50	2	47	1	5	...	45*
Abscess of the Liver...	3	1	1	1	3	...	...
Suprapubic Cystotomy ...	1	1	...	...	1	...	...
Operation for Empyema ...	1	1	...	...	1	...	...
Operations on Urethra ..	5	1	3	1	5	...	...
" " Rectum and Anus	6	5	1	...	6	...	...
" " Bone	16	10	5	1	16	...	...
" " Muscles ...	2	2	...	...	2	...	...
" " Joints	2	1	...	1	2	...	...
" " Male Generative Organs	42	39	3	...	10	18	...
" " Female " "	3	3	...	...	3	...	...
" " Lymphatic system ...	3	2	1	..	3	...	...
Incision of Abscesses...	47	46	...	2	7	10	10
" " Carbuncles...	3	2	1	..	3	...	...
Operations for sinuses & fistulæ	2	2	...	...	2	...	...
" " Phagedenism ...	6	6	...	...	6	...	...
Removal of foreign bodies ...	1	1	...	...	1	...	...
Total	225	153	63	9	98	38	10
							79

* Paracentesis

Exclusive of 45 paracentesis, 178 surgical operations were made during the year viz :

98 under chloroform
 39 with cocaine
 10 with chloride of Ethyl
 32 without anaesthetic.

There were 9 deaths after operations, viz :—

(1) One from shock after amputation of the leg for very severe railway injury. The patient had lost a considerable quantity of blood before being sent to hospital.

(2) One from Abscess of the Liver. The patient admitted in a state of extreme Debility died three days after the operation.

(3) One from Tubercular Arthritis.

(4) One from Tuberculosis of bone.

In both cases, the operation gave temporary relief.

(5) One from Cerebral Haemorrhage the result of accidental violence. Trephining was resorted to but proved of no avail.

(6) One from Abscess of the Spleen.

(7) One from Asthenia attending multiple urinary fistulae for which external urethrotomy was performed as an urgent measure.

(8) One likewise from Debility attending diffuse deepseated suppuration of the thigh.

(9) One from Chronic Myclitis complicated by iliac abscess
 Patient died 9 days after the operation.

Remarks on some operations performed :

(a) The amputations performed were as follows :—

Finger	...	...	...	...	8
Toe	...	...	...	...	1
Fore-arm	...	...	...	...	2
Leg	...	...	...	...	2
					—
Total	...	...	...	...	13
					—

(b) The following were the different kinds of tumours removed :—

Epithelioma (lower lip)	...	...	1
Fibromas	...	...	4
Papillomas	...	...	3
Cysts	...	...	2
			—
Total	...	...	10
			—

(c) Operations on the eyes :—

Cataract 3 with 2 successes
 Critchett's operation
 for Staphyloma ... 1 successful

(d) We had one case of *Abscess of the Spleen* which unfortu-

nately ended fatally a fortnight after the operation. The diagnosis was confirmed by post-mortem examination. Nearly the whole organ was excavated, only a shell of tissue from two to three centimetres thick being left.

(e) *Herniotomy* for strangulated hernia was performed in two cases, both of which resulted in perfect recovery.

The operation was made under strict aseptic precautions and union by first intention was obtained in both cases notwithstanding the fact that one of the patients was a very old man, suffering at the same time from severe Bronchitis.

(f.) One of the most interesting operations performed during the year was a Suprapubic Cystotomy for Gangrene of the bladder.

The patient was sent to Hospital by Dr. Naz who asked leave to operate and follow the case. The whole of the mucous membrane of the bladder had sloughed and was removed "en bloc" through the Suprapubic opening. During the night which followed the operation, profuse haemorrhage set in but was successfully dealt with by the Asst. Medical Superintendent.

The patient eventually made a good recovery and was discharged two months after the Operation. This case deserves special mention for its rarity, its gravity and its successful termination.

(g.) Another interesting operation was for Elephantiasis of the Scrotum. The patient had to be kept nearly two hours under Chloroform. The left testicle which was considerably hypertrophied was removed and the right one which was of normal size was preserved. The thickened part of the tunica vaginalis connected with the sound testicle was divided with scissors and the rest turned outside in so as to leave the testicle exposed. The edges of this remnant of tunica vaginalis were sutured to the margin of the Scrotal wound. The patient suffered from Orchitis for a few days but gradually the testicle became covered with granulations which ended in sound cicatricial tissue. He left Hospital cured.

The tumour weighed about two kilos.

(h.) *Gynaecological Operations.*

Removal of Uterine Fibroid Polypi per vaginam...	...	2
Operation for Atresia vaginae following confinement	...	1
Perineorraphy	...	1
Curetting of Uterus for Metritis	...	1
		<hr/>
	Total...	5
		<hr/>

23. *Bacteriological Laboratory work.*

The Bacteriological laboratory attached to this Hospital and under the intelligent charge of Mr. Maya, did as usual

excellent work.—The following is “a resumé” of the researches carried on during 1902.

TABLE XV.

Nature of the Researches.	No. & Re- sults.	
	Positive	Negative
1. Willal's sero-diagnosis of Typhoid Fever ...	18	20
2. Bacteriological examination of fresh specimens for		
(a) Tubercl Bacilli	25	19
(b) Diphtheria „ „ „	6	19
(c) Plague „ „ „	19	8
(d) Gonococci ... „ „ „	8	3
(e) Pneumococci... „ „ „	11	9
(f) Bacilli of T. tinus ... „ „ „	..	3
(g) „ „ „ Leprosy ... „ „ „	..	2
3. Bacteriological examinations of		
(a) Ascitic fluid for Tubercl Bacilli & Cancer Cells ... „ „	..	1
(b) Pleuritic fluid for Streptococci & Eberth's Bacilli ... „ „	..	2
(c) Human blood :		
for Laveran's bodies ... „ „	7	5
for Filaria... „ „ „	..	4
(d) Animal blood :		
for Trypanosoma ... „ „ „	20	..
for Pyrosoma ... „ „ „	1	10
(e) Urine :		
for Filaria... „ „ „	10	..
for Bilharzia ... „ „ „	4	..
4. Microscopical examination of Urinary deposits...	68	..
5. Histological Sections & Microscopical examinations of coloured preparation of the same...	3	..
6. Microscopical examinations of coloured prepa. of		
(a) Trypanosoma... „ „ „	40	..
(b) Pyrosoma ... „ „ „	16	..
7. Quantitative analyses of Urine for Sugar, Albumen, Urea & Acids ... „ „	64	..
8. Quantitative Analysis of a Urinary Calculus ...	1	..
9. Radiographs. ... „ „ „	No. 21	..

B. DEPARTMENTAL.

1. It is my painful duty to record in this report the loss sustained by the Civil Hospital through the lamented death of its Superintendent, the late Dr F. Antelme, which occurred in April last. I had, for many years past, the good fortune of being associated with Dr Antelme in Hospital work and I cannot now recall without grief the friendly relations which existed between us, the courteous regard he always showed to his colleagues, his genial kindness to his patients and his eminent qualities as a Physician. In mentioning this sad occurrence I wish, not only in my own name but also in that of the whole staff to pay a sincere tribute of respect and affection to the memory of one whose up-

right and sympathetic nature had endeared him to every one connected with the Hospital under his charge.

2. On the death of Dr Antelme I was called upon to assume the Superintendentship of the Civil Hospital. In my endeavour to discharge the arduous duties of the post to the best of my abilities I received valuable assistance from the Resident Surgeon, Dr Sinatambou, whose zeal and conscientiousness I am happy to acknowledge here.—I am also glad to record my full appreciation of the services rendered to the Establishment by the Pharmacist, the Steward and Accountant and the Head Warder who all proved reliable and intelligent Officers.—The Warders, Dispenser and Store-Clerk likewise, gave satisfaction on the whole.—The same can unfortunately not be said of the servants, a number of whom had to be dismissed for neglect of duty, misbehaviour or absence without leave under aggravating circumstances.—The Hospital regulations concerning punishments to be inflicted on faulty servants are in complete and not clearly defined.—They should, I submit, be amended as soon as possible in the interest of the service.

3. In the course of the year, I forwarded a plan for the reorganisation of the Staff of warders and servants, as regards pay. In my opinion these "employés" are underpaid, considering the nature of their duties, and I hope that my recommendations on the subject will in due time be favourably entertained.

4. Constant difficulties were experienced throughout the year with one or other of the Contractors. These irregularities are, I need hardly say, very detrimental to the patients.—Owing to failure of supply, partial or complete, on their part, the meals have to be forcibly delayed and substitutes, which patients do not always like, have to be used in lieu of articles prescribed.

I hope that steps will be taken once for all to bring unscrupulous Contractors to a stricter sense of their duties and a better observance of the terms of their contracts.—

5. Among the patients returned as cured have been included a number of admissions who did not present any appreciable signs of disease and who had nevertheless to be kept in Hospital. They were chiefly Mothers who could not be separated from their children or vice-versa when either was ill. In the case of young infants, nothing else can be done but it not unfrequently happens that female patients are sent to Hospital by the Poor Law Dispensaries with families of 2 or 3 Children, from 3 to 7 years old, who have little or nothing the matter with them and who have to be admitted with their mothers simply because the latter have no one to take care of their children during their stay in Hospital. I consider that special provision should be made either at the Hospital or in an Orphanage for the reception of such children pending their mothers' recovery as their presence under the existing circumstances contributes to the overcrowding of the wards.

6. The following is a return of paying and non-paying patients for the year :

I. Paying patients—

1. Private Patients	...	...	650
2. Police Constables	...	...	750
3. Prison Department	...	...	100
4. Port Department	...	...	29
			<hr/>
			1,529

II. Non-paying patients—

1. Government Laborers and Hos-			
pital Servants	...	...	402
2. Paupers...	...	...	4,200
			<hr/>
			4,602
			<hr/>
Total	...	...	6,131

The difference between the above total and the number of admissions (6092) is due to the fact that 39 patients appear twice in the Accountant's return, because, for some reason or other they had to be transferred from one category of patients to another.

7. The existing uncertainty as to the final destination of the buildings presently occupied by the Civil Hospital forces us to leave in the back ground certain important alterations calculated to adapt the place entirely to its new requirements. It is to be hoped that this question, which so preeminently interests the welfare of this Establishment, will be definitely settled in 1903.

F. A. ROUGET,

M.B., G.M.,

Acting Medical Superintendent Civil Hospital.

12th February, 1903.

Report

On the work performed by the Government Analyst
in the year 1902.

In conformity with your letter of 23rd. Febrbary last I have the honour to submit the following Report on the work performed during the year 1902.

As you an aware the work includes two distinct branches of analytical enquiry viz- The Medico-legal for the Judicial Department and the General, for the Medical and Health, and other Public Departments and the Municipality.

Most of the analyses performed for the latter Department were however, connected with the examination of alimentary substances.

43 investigations were required by the Judicial Department and these involved the separate examination or analysis of 151 different articles or pieces of conviction.

For the Medical and Health and other Departments 45 analyses were performed, including the separate examination of 76 samples.

The total number of articles or samples examined amounted therefore to 227 during the year.

In addition to this work several important questions were submitted by Government to the Analyst for report which required much time and research for their elucidation.

Medico-legal Analyses.

Judicial analyses were required by the different District Courts in the following order of frequency viz :

	Number of analyses.
Port Louis	...
Pamplemousses	...
Grand Port	...
Flacq	...
Moka	...
Rivière du Rempart	...
Savanne	...
Black River	...
	<hr/>
	42
	<hr/>

One analysis was also required by the Government of Seychelles in an alleged case of poisoning.

The Medico-legal investigations had reference to the following cases.

	Cases.
Poisoning	16
Murder and attempt at murder ...	13
Rape and attempt at rape ...	7
Coining and possession of false coins	2
Larceny with wounding ...	1
Sodomy	1
Polluted water	1
Police enquiry into cause of death of a prisoner (examination of pathological specimen.)	1
Adulterated milk	1
	<hr/>
	43
	<hr/>

In 6 of the cases of poisoning distinct evidence of poison or noxious substance was found, and they were attributed to the following substances viz.

	Cases.
Belladonna	1
Stramonium	1
Alum and Salt	1
Arsenious Acid	1
Corrosive Sublimate	1
Ground Glass... ...	1
	<hr/>
	6
	<hr/>

2 of the alleged cases of poisoning were found to have been caused by ptomaines from the early decomposition of the articles of food used by the patients. In one of these cases three or four Indians were taken suddenly ill after partaking of a curry of shark's liver. No poisonous substance was found except a ptomaine which may have been the cause of the ill effects observed.

The case of corrosive sublimate poisoning occurred at Savanne. It was administered with rice to a neighbour's fowls by an Indian woman who had obtained some of this poison in large crystals, probably from a person connected with one of the Estate hospitals.

The sample containing alum and salt was forwarded from Pamplemousses. A baker was given a certain quantity of this mixture to be added to his flour. As this is a practice often adopted by unscrupulous bakers in Europe for the purpose of giving a better appearance to an inferior quality of flour it is probable, in presence of this case, that this objectionable practice is not unknown in this Colony, and it would be interesting to ascertain whether the cheaper kinds of bread sold by Chinamen and others are altogether free from alum.

The case of arsenical poisoning took place at the Citadel. One of the Sepoy Officers had noticed a strange taste in his food and suspecting one of his servants he gave part of his meal to a dog. The animal died soon after eating the same. A box of a powder labelled "Rough on rats" was found partly empty and it was believed that some of it had been mixed up with the officer's food by the servant in question.

The powder when analysed was found to contain Arsenious Acid, and the same poison was found in the portion of the officer's food sent up for analysis, as well as in the contents of the stomach of the dog experimented upon by him.

No poison was found in 8 of the alleged cases of poisoning.

One of them is interesting to show how prone some persons are in jumping at the conclusion that a case of attempt at poisoning has been made out, when a simple preliminary enquiry into the circumstances under which it has occurred would have saved much trouble and unnecessary waste of time.

The boiling water used for making coffee in a certain family was discovered to have a greyish white appearance and a peculiar taste.

Some of it was sent to a pharmacy and it was examined (by one of the junior pupils no doubt) and declared to contain arsenic. A careful analysis however showed that the alleged attempt at poisoning had only been effected by means of soap water. No trace of arsenic was to be found in the greyish liquid. In fact it was subsequently ascertained that the cook had accidentally forgotten a piece of soap in the kettle in which the water had been boiled.

Out of the 7 cases of rape enamined spermatoza were found in 3, blood and spermatoza in one, and both blood and spermatoza in another.

For the purpose of demonstrating spermatoza in these cases I have adopted a method of examination which has proved most satisfactory, being given the great difficulty formerly experienced in discovering them in unstained preparations.

A small piece of the suspected stain is cut out, placed on a glass slide and slightly moistened with distilled water. A cover glass is laid on the same and slight pressure exerted. After a few minutes to half an hour, according to the state of previous dryness of the stain, the cover glass is lifted off and the piece removed from the slide. The smears now left on the slide and cover glass are allowed to dry spontaneously then treated with absolute alcohol for the purpose of "fixing" any spermatoza on them.

They are then gently warmed for a few minutes with a 2% watery solution of eosine, the excess is poured off and the preparations washed by gently moving the glasses about in a dish of water. After drying, the cover glass smear is laid in its original position over that on the slide and the two connected by means of a drop of Cedar Oil.

The preparation is then examined with the oil immersion objective, the best magnifying power for the purpose being 500 to 750 diameters, and the spermatoza present are seen entire, beautifully stained in pink throughout.

The same method has also given me good results for staining red blood corpuscles, especially in cases where some difficulty is experienced in separating the corpuscles from one another in comparatively old stains on sticks or on knives.

The analyses performed for the Medical and Health and other Departments were distributed as follows :

Medical and Health Department	...	...	...	...	24
Municipality	...	...	...	...	8
Additional Assistant Sanitary Warden	...	...	...	...	5
Government Medical Officer, Plaines Wilhems	...	...	...	...	4
Lunatic Asylum	...	...	...	...	3
Receiver General's Department	...	...	...	...	2
					<hr/>
					46

There were also several minor examinations of urine and of pathological specimens from the Barkly Asylum Hospital from time to time.

The substances analysed were as follows :

Milk	...	...	...	24	cases.
Water	...	...	...	7	"
Medicines	...	...	...	3	"
Rum and Brandy	...	...	2	"	
Substance for denaturing alcohol	...	1	"		
Preserved lobsters	...	2	"		
Sardines	...	2	"		
Urine of bullock (diseased)	...	1	"		
Plague and surra slides (for report)	...	3	"		
		<hr/>			
Total	...	46	cases.		

The greatest number of analyses was as shown above for milk contraventions.

Of the 24 samples examined the reports were as follows :

Skimmed	...	...	...	5	samples.
do. and diluted	...	...	1	"	
Watered	...	...	12	"	
do. and specific gravity raised by addn. of cane sugar	...	3	"		
Not adulterated	...	3	"		
		<hr/>			
Total	...	24	samples.		

The adulteration amounted to as much as 30 o/o of water in some cases.

In reference to milk analyses much difficulty is often experienced in doubtful cases in deciding whether the milk has been adulterated or not.

The practice adopted in England by the Society of Public Analysts is to take as a minimum standard of good quality a percentage of 3 o/o of butter and 8.5 o/o of non fatty solids.

This standard has since been adopted by the Board of Agriculture.

I have always applied this standard of non fatty solids for testing milk adulterations in this Colony as I have never yet found a sample of genuine milk, even of the poorest kinds such as those supplied by Indians, in which these elements were lower than 8.5 o/o.

On the other hand I have adopted 2.5 o/o as the minimum for reporting on cases of skimming, as the 3 o/o rate for butter is seldom reached by the milk of the cows, of inferior breeds and poorly fed, kept by these Indians.

A method of adulteration adopted on the large scale by the milk sellers, especially by the sub-contractors to Government Institutions, is dilution with water and subsequent raising of the density of the milk by the addition of cane sugar. This practice was very prevalent in 1901 when a low rate of 7 cents only was paid per litre to the contractor by Government. It has fortunately diminished since a better price has been given and also in consequence of prosecutions and fines imposed on these unscrupulous sub-contractors subsequent to several reports I have had occasion to make against them.

This adulteration is very difficult to detect simply by the lactometer if the milk is not tasted.

In the analysis of such diluted and sweetened milk the standard adopted for non fatty solids cannot be relied upon, unless a more complete analysis is performed.

The method I have found most convenient for the purpose is that recommended by Messrs. Stokes & Bodmer.

The total non fatty solids are first determined in the usual way, the lactose (calculated as glucose) found by Pavy's ammonio cupric method; a certain quantity of the milk diluted to 1/10 boiled with 2 o/o of citric acid then neutralised with ammonia and the reduction again ascertained. The difference of the two results multiplied by the factor .95 gives the amount of cane sugar present. This deducted from the non-fatty solids found gives the real amount of non fatty solids not due to the cane sugar added, and from this difference the amount of water added can be calculated by reference to the standard of 8.5 o/o of non fatty solids normally expected. The method appears to be complicated but it is easy of application in practice.

A question of considerable practical importance for Sanitary Inspectors was settled in April 1902 in reference to the use of the lactometer alone for the purpose of taking milk contraventions.

10 milk sellers were charged at the time before the District Magistrate at Rose Hill, by a Sanitary Inspector, with selling adulterated milk because the instrument used by him indicated a density of 1019 to 1020. No correction having been made for temperature and capillarity. The men having pleaded "not guilty" and no sample having been kept for analysis, I was summoned as Government Analyst to give an opinion as to whether under such conditions of examination it would be equitable to inflict a fine on those milk sellers.

I stated that as the density of milk varied, independently of the addition of water, with the temperature and the proportion of fat present, and as the latter itself depended on the breed, the amount and quality of the food given, the state of health of the animal, the period of lactation and the moment at which the milk was drawn (the first milk drawn being poor in fat, while the last portions are exceedingly rich in the same), and as there was nothing to show, in the absence of correction

for capillarity and temperature, that the low densities observed might not have been due to a milk rich in butter from any of the causes above mentioned, it was impossible merely from the low reading of the lactometer to decide whether the samples were adulterated or not.

Dr Barbeau, the assistant Sanitary Warden was heard. One case was dismissed and the 9 others subsequently withdrawn.

A correspondence subsequently resulted on the subject and I quoted Wanklyn's opinion to the effect that "the only really safe and satisfactory manner of examining milk was by means of an analysis of it."

I recommended however that with certain precautions the lactometer might still be used by Sanitary Inspectors as a preliminary method of ascertaining whether the milk was suitable for analysis or not. In cases where a low reading was obtained the milk seller was to be brought before the nearest Magistrate and charged with adulteration. In the event of his pleading guilty matters would be simplified for all concerned. Should he however deny the charge a sample was to be sent at once for analysis.

I understand that these suggestions have been carried out by the Sanitary Authorities and that the method appears to be working well at present.

Another question of considerable importance was submitted to me by Government last year in reference to the advisability of using condensed milk in lieu of fresh milk in Government Institutions.

The Swiss Milk Society, having offered to send a certain number of cases of their "Cows head" brand on trial, I reported that although such a brand, as shown by an analysis from the Lancet Laboratory, was a very good one and could be used as an occasional substitute for fresh milk, owing however to the milk having been sterilized *i.e.* raised to a temperature of about 105 o. C., its nutritive value was thereby materially affected, and in presence of the numerous cases on record of Infantile Scurvy or Barlow's disease, which have resulted from the continued use of such sterilized milks, it would be undesirable to substitute such a milk to the ordinary fresh milk supplied actually by the contractors.

I submitted however, that every endeavour should be made to try and secure a good supply of fresh milk for the various Government Institutions, either by a regular supervision of the cows from which milk is obtained or by the establishment of a well conducted Government Dairy farm.

I am glad that Government has decided in principle to carry out the scheme I have proposed for the establishment of a dairy farm at the Lunatic Asylum and I hope it will be started as soon as the surra disease has abated.

The other questions on which I have been called upon, as Government Analyst, to give an opinion are the Regulations under which a match factory could be established in the vicinity of Port-Louis ; the Denaturation of alcohol for industrial pur-

poses, and the conditions under which gazoline or petrol could be safely kept on one's premises for the use of automobiles or motor cars.

A considerable amount of my time was also taken up with the study, together with other members of a Special Committee, of a suitable amended diet scale for the use of the lunatics quartered at the Barkly Asylum Lunatic Branch wards.

Lastly, I regret that in many cases, especially of water and other analyses sent from the Medical and Health Department, some delay has often resulted in reporting the results of such analyses, but as I have already had occasion to point out (vide letter of 1.12.02) this was unavoidable and due to the great pressure of work I have been called upon to perform alone at certain moments and also to the manifest incompleteness of the small laboratory in my charge.

Under the present arrangement, the performance of analyses requiring quantitative determinations of several elements is indeed a very slow and laborious undertaking and it is highly desirable that with a view to the simplification of long and possibly obsolete processes the laboratory be placed on a proper footing and provided with the more modern apparatus and the other requirements I have mentioned in the letter above quoted.

J. J. PADDLE, M.D.,

Government Analyst.

2nd. April, 1903.
